



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Nesting and Other Habits of the Oregon Towhee.

BY D. A. COHEN, ALAMEDA, CAL.

[Read before the Northern Division of the Cooper Orn. Club, Sept., 1898.]

THIS variety, *Pipilo maculatus oregonus*, was here at one time known by local collectors as the Spurred Towhee, *P. m. megalonyx*, but now as near as I can determine the true Spurred Towhee is not found nearer than Monterey County and our Alameda County variety is *oregonus*. With us the Oregon Towhee is resident, spending the late summer until spring somewhat gregariously, caused probably more from choice of location than from sociability, but it is not observed in pairs so much as the Californian Towhee, *P. fuscus crissalis*, at the period just stated. At this season it is wariest, secluding itself to the underbrush, but after pairing in the spring is much more easily approached, owing in a great measure to its uneasiness at the approach or the invasion of its nesting site. At this time, especially if a nest is under construction, both birds display great uneasiness, flitting about the tops of the low growth, uttering their unmusical "chir-chee-wee" or "che-wee-ee" but their utmost anxiety is displayed after the young are hatched. The birds continue their various notes so long as a person remains in the vicinity of the nest, and approach quite close if the person remains reasonably quiet. Presuming the female does all the incubating, the male at this period generally betrays the vicinity of the nest by his nervousness, his notes first attracting attention. He is often heard, from his perch, uttering notes, caused by nothing further than inclinations. The notes at any time are little varied. After the young are grown very little is heard of the Oregon Towhee's vocal powers unless the bird is driven from its retreat or is suddenly startled.

Being almost terrestrial it is also partly arboreal, often flying short distances from tree to tree and when pursued often forsaking the underbrush for trees. Its food is obtained mostly from the ground chiefly by scratching, after the manner of the robin, and is mostly insectivorous. It is one of the last birds

to settle down for the night. I have not met this bird throughout the country as abundantly as I expected to and among hundreds of nests I have found only one was away from Alameda. This nest was found by accident. As I was resting in a densely wooded locality thickly grown up with underbrush where I had for a number of years noticed one pair of Oregon Towhees, yet never expecting to find the nest in such a wild place, a movement in the bushes close by almost caused me to shoot at a supposed wood rat, but upon investigation it proved that it was the flushed bird slipping back onto the nest, containing a handsome set of four eggs, the nest elaborately composed of weed stems and a larger proportion of dead leaves, situated two feet from the ground among dense brambles and fallen leaves, and about eighteen inches from the top of the mass, and several feet from the road.

All the nesting data about to be related is from my home in Alameda and recorded from a radius of less than 400 yards. From 1886 to about 1892 I found annually an average of eight sets and a few nests containing young. There were then approximately nine pairs of birds and many sets were second sets of the same season. At that time the nests were placed on the ground with very rare exceptions, but owing to an army of cats that had become self supporting there were in 1898 only seven pairs of Oregon Towhees on the premises and nearly all the nests for the last five or six years were placed off the ground, especially on clumps of prickly wild blackberry vines. Having freed the premises from the cats by late spring, the Oregon Towhees began to build more on the ground, also the California Partridges commenced to resume their choice nesting sites. The Oregon Towhees' usual nesting site is under a small wild blackberry vine growing among the grass, or under low growths of these vines, always more or less in the shade of a tree. Occasionally under

the foliage of cypress limbs spreading over the ground, more commonly under myrtle, less commonly among ivy growing along the ground, but always in a partly shaded spot. One nest was under the drooping leaves of an artichoke plant and one beside a lauristinus hedge among a bed of verbenas was subjected to almost all the sun. In all these ground-nesting cases the bird scratches a hollow in the sandy soil or leaf mould about an inch deep before bringing building material. One nest, four feet from the ground, was fashioned into the rather flat top of a partially decayed oak stub on a live oak, the trunk of the tree and the stub being overgrown with ivy. It contained a set of four eggs and as near as I remember, fifteen eggs of the California Partridge. The female ? towhee was incubating on top of the pile. The partridge occasionally deposits one or two eggs in a towhee's nest built on the ground. One nest on the ground contained three towhee's eggs and eighteen partridge's, the towhee having abandoned the nest after six or eight partridge eggs were deposited in it. One peculiarly situated nest was almost under a log lying under an oak tree; it also contained one partridge egg. Several years ago I found a high nest, nine feet up in a large cypress tree and several others about this distance from the ground, among oak branches intergrown with wild blackberry vines, while in 1898 I noted a nest twelve feet up in the same cypress tree. No eggs were laid in it. One nest, one foot off the ground, was in a geranium bush, one in a cypress hedge five feet up, one, unused, in a small apple tree eight feet up and several in low thick garden shrubs, while others were on top of low clumps of wild blackberry vines so that the leaves afforded concealment and protection from the sun and in rare cases trees afforded no shade.

The earliest nesting date is March 27, 1888, the next earliest, April 4, 1896, with complete sets, yet April 20 is none too early for first sets. Sets of fresh eggs in June and July are indicative of second or third sets, as I have experimented to demonstrate this by taking the first and second sets of particular

pairs of Oregon Towhees causing them to build and lay three times in one season. As an instance of this towhee's devotion to a particular spot, I removed in one season three nests and sets of one pair of birds and an average of two sets a season in other seasons from the same pair for four or five years in succession. Their nest was always within twenty feet of the center of a low growth of wild blackberry vines under a large oak tree. This experiment also goes to demonstrate that oologists do not, by taking a set of eggs, destroy that number of birds, as some people think it does. I can quote instances of other species of birds producing a new nest and set of eggs in a remarkably short period after being robbed of the first or even the second set, if it will be of any help to the oological fraternity. The towhees require from two to three weeks after being robbed to produce a new domicile and eggs; some other species less time. The second nests usually contain less material than the first, and as an example of this assertion and to demonstrate the devotion of the birds to a certain area of their choice, in 1897 I took a second set from under a small blackberry vine in a wooded pasture and the third set was found three weeks later about sixty feet distant from the site of the first under a very small vine where the grass had been entirely eaten down and was very scant in material.

I can never think otherwise than that Major Bendire was correct in asserting that eggs of individual birds in consecutive sets bear marked resemblance to each other, for, by taking into account the similarity of a late set to the preceding set of the same year, both sets taken nearly from the same spot, the evidence is almost conclusive, not alone in the case of the Oregon Towhee but with many other birds, and to make it conclusive, in my opinion at least, I have noticed that eggs taken from year to year from the same small area occupied by one pair of birds, bear unmistakable resemblance in shape as well as in coloration and style of marking. In a large series, just as they come, the shape, coloration and marking of different sets are remarkably

wide apart; some are long, either oval or pointed at one end, seldom pointed however, while others are much rounded. The difference in size and shape of eggs in one set is occasionally commentable and the style of marking may be odd, also the ground color, while very rarely all these characteristics present themselves in a set of four eggs.

Four eggs is the average number to a set, often three, and only twice have I found five eggs. I have taken two sets of two eggs each, all much below medium size; three eggs were well incubated and the fourth was infertile. In early numbers of the *Nidologist* I referred to having found sets of unusually small eggs, and individual birds laying successive sets of such eggs. The only abnormally large egg I found was among a set of three eggs. One nest of four very small eggs contained two that were infertile, two heavily incubated and two of the California Partridge, heavily incubated.

The nests bear a great similarity in material used. The general composition is a lot of dry leaves for a foundation or for a lining over the earth, strips of bark, stalks of weeds, coarse dry grass, occasionally a few shavings and rubbish that can be worked into the foundation and rim. The lining is the least variable, being neatly laid, rather crosswise, and consists of a certain kind of fine, bright, dry grass which is almost all stem. Occasionally there is a little less of this grass when long hair is substituted, but this they seem unable to place so neatly as the California Towhee. A nest under an oak in the

center of a large grain field was composed of a few pieces of weed stems, the balance and the lining of short, rather coarse black rootlets, the wild grass in this case being probably too far distant for birds of short flight to carry. A nest built near a pile of dead cypress branches was composed chiefly of strips of bark from the branches. Other nests whenever found under pine trees are invariably lined totally with dry pine needles, the birds evidently preferring this pliant material of suitable length to the kind of grass usually used and growing close by.

The young when first hatched are black with yellow gapes and covered with thin greyish-white down. The incubating bird sets close and the nest is usually found by flushing the bird which at times flushes at the sound of approach fifty feet away, always betraying the location by rising high enough into the air to be detected, though occasionally slipping away through cover to a short distance, only to make a fuss and cause a search for the nest. At times the bird hops along a few feet before rising.

Some years ago, one winter, I beheld an Oregon Towhee on top of a leafless apple tree truthfully imitating the California Jay's commonest notes, very different from its own. From my close point of observation I could detect the movements of its throat and bill and determine that none other than the object of my gaze was for the time being the "mockingbird", the only one of its kind I have had the fortune to hear.

Summer Resident Warblers of Arizona.

BY O. W. HOWARD, LOS ANGELES, CAL.

[Read before the Southern Division of the Cooper Orn. Club, Feb. 25, 1899.]

VIRGINIA'S WARBLER.

(Concluded.)

This species is quite common in the pine regions throughout Arizona, but I have not seen it at a lower elevation than 5000 feet. Unlike other warblers in this section, they keep almost entirely in the underbrush, where they are continually on the move and at the same time uttering a quick chirp as if in distress. Owing to the dull plumage

and retiring habits of this bird comparatively few are seen. The nests are placed on the ground, under a bush or tuft of grass and are made of fine straws, rootlets and fibres, loosely put together. Except when the birds have young, they are very shy about going to the nest, and for this reason few nests are found with eggs while more are found containing young birds.